SCUPPERNONG RIVER WATERSHED (LR15)

Kettle Moraine State Forest: South Unit

The Scuppernong River is a tributary of the Bark River in Jefferson County. The watershed is bordered on the southeast by the Kettle Moraine State Forest and lies within portions of three counties: Jefferson, Walworth, and Waukesha. The predominate land use is agricultural though there is significant public ownership in the state forest and two state wildlife areas with large forested tracts and wetland areas. Other wetland areas have been drained for agriculture. The only urban area in the watershed is the village of Palmyra with a population of 1,766 in year 2000. Substantial low density residential and industrial park development is; however, occurring throughout the watershed. Long-term development and water resource protection plans are needed to identify and protect resources, especially those near the Kettle Moraine State Park.

This watershed has a medium susceptibility for groundwater contamination based on WDNR groundwater susceptibility mapping.

STREAMS

Scuppernong River

Scuppernong River rises in Waukesha County at the edge of the interlobate moraine in the Kettle Moraine State Forest. Reproducing populations of brown trout inhabit the upper reaches, but habitat is impaired by old hatchery ponds that discharge warmer water to the stream. From the area just below the hatchery pond to the Jefferson County line, the stream is a Class III trout stream. Trout habitat is degraded by the warm water mentioned above, and by habitat and substrate loss due to ditching and the low gradient of the stream. In Jefferson County, agricultural effects on habitat are apparent with significant ditching and straightening of the river and many of its tributaries. The river changes to a warm water fishery consisting of forage fish and pan fish with the possibility of some northern pike.

Funk Creek, a 1.5-mile-long creek, enters the Scuppernong River east of Highway Z in Waukesha County. It is a Class III trout stream. Agricultural runoff impacts are present and some of the effects of past ditching are noticeable. Southeast Region Fisheries staff have improved habitat and restored creek meanders over the last several years.

Mud Creek is a low-gradient tributary to Scuppernong River with extensively ditched headwaters. Drainage near the stream's mouth is controlled by muck farm ditches and pumping stations. As of 1968 a square mile of wetlands had been drained.

Paradise Springs Creek is a Class II trout stream in Waukesha County. Trout rearing ponds were constructed at the headwaters of this stream several years ago, resulting in degradation of water quality due to warming of the water. All but one pond have been removed. Segments of the stream are ditched and straightened. Recent habitat improvement work has been done to counteract the effects of previous ditching.

Steel Brook flows out of LaGrange Lake north into Jefferson County where it joins the Scuppernong River. It is a Class II trout stream above Bluff Road and a Class III stream for about 3.3 miles below Bluff Road. Ditching affects water quality and habitat as do large muck farm operations and one large livestock operation. Many artesian wells and springs feed the stream.

Spring Creek

Spring Creek originates from Blue Spring Lake and is a clear, sand-and-gravel-bottomed tributary to the Scuppernong River in Jefferson County. Ditching and straightening of much of this stream altered its hydrologic characteristics. A 1984 stream system habitat evaluation gave it a "fair" ranking, reflecting the channel modifications and unstable sand substrates. The stream exhibits good water quality but habitat and productivity are limited.

LAKES

Lower Spring Lake has developed an aquatic management plan to obtain funding for a plant harvester via the Waterways Commission. The lake has a heavy invasion of Eurasian water milfoil. The lake association sponsors a milfoil/weevil study that is ongoing and is one of the participating lakes in the study. The lake association used to conduct Secchi disk monitoring.

Blue Spring Lake has a volunteer through the WDNR's Self-Help Monitoring Program collecting trophic state information. The lake is currently in the later stages of its second lake planning grant. The second grant is looking at user issues with the overall intent of developing long-term lake management recommendations. The first lake planning grant funded water quality and lake sediment analyses. The lake is highly developed with lots of boating. It used to be heavily dominated by Eurasian water milfoil, which declined following a 1993 herbicide treatment, but is now reaching dominant levels. The lake association has its own harvester.

Eurasian watermilfoil

WPDES Specific Permits

The following facilities, both municipal and industrial, hold WPDES Specific Permits and are located in this watershed.

Table 1: Specific Permit Facilities in the Scuppernong River Watershed

Facility Name	Permit # Exp. Date	Design Flow (MGD)	Receiving Water	Stream Class	$Q_{7,10}$ (cfs)	Activities	Latitude/ Longitude
Cold Spring Egg Division	0002437 12/31/2001	na	Groundwater	na	na	Private	42°52'47.9" N 88°28'59.4" W
Village of Palmyra	0031020 09/30/2006	0.230	Scuppernong River	WWSF	3.9	Municipal	
Rushing Waters Trout Farm	0002488 12/31/2005	2.0	Spring Creek headwaters	WWSF	0.034	Private	

Blue Springs Lake: developed shoreline

Resources of Concern

WDNR's Heritage Resources Database indicates that the following water-dependent endangered, threatened or special concern species and/or communities have been sighted in this watershed within the last 20 years.

Table 2: Endangered, Threatened or Species of Special Concern

Species Common Name	Latin Name
Lake Sturgeon	*Acipenser fulvenscens*

Lake sturgeon

Table 3: Endangered, Threatened or Communities of Special Concern

Community	Indicator Species/Description
Southern Dry Forest	White and black oak dominate, with mix of red and bur oaks and black cherry. Shrubs include brambles, gray dogwood, and American hazelnut. Herbs include wild geranium, false Solomon's seal, hog peanut, and woodland sunflower.
Southern Dry Mesic Forest	Red and white oak, basswood, sugar and red maples, and white ash. Diverse herbaceous understory includes jack-in-the-pulpit, enchanter's nightshade, large-flowered bellwort, interrupted fern, Lady Fern, tick-trefoils, and hog peanut.
Calcareous Fen	Open wetland often underlain by calcareous substrate through which percolates carbonate-rich groundwater. Diverse flora includes sedges, marsh fern, cinquefoil, St. John's wort, Ohio goldenrod, grass-of-parnassus, boneset, and asters.
Wet Mesic Prairie	Herbaceous grassland dominated by big bluestem, Canada bluejoint grass, cordgrass, and Canada rye. Forbs include azure aster, shooting star, sawtooth sunflower, prairie blazing star, prairie phlox, prairie coneflower, prairie docks, goldenrods, and culver's root.
Springs/Spring Runs	Bubbling and perched seepage springs support watercress, forget-me-nots, water starwort, and water parsnip.
Oak Opening	Wet-mesic to dry sites with <50% canopy. Bur, white, and black oaks dominate. Shagbark hickory, American hazelnut, and various grasses and herbs often present.

RECOMMENDATIONS

Southeast Wisconsin Regional Planning Commission (SEWRPC) is the designated planning agency for the Waukesha and Walworth county portions of this watershed. Consult Planning Report Number 93, A Regional Water Quality Management Plan for Southeastern Wisconsin: Status and Update Report (1995) for water quality recommendations.

Prairie rosinwood: flower and buds

The Lower Rock River Basin Team should remove the headwater dams on the trout ponds of the Scuppernong River.[1]

1. The Lower Rock River Basin Team should undertake habitat restoration projects to restore the ditched portions of the Scuppernong River in Waukesha County.[1]
2. The Lower Rock River Basin Team should establish 150 acres of waterfowl and pheasant nesting habitat on land adjacent to the Scuppernong River.[1]
3. The Lower Rock River Basin Team should install additional habitat improvements along Funk and Paradise Spring creeks.[1]
4. The Lower Spring Lake Association should continue to look at ways to reduce the negative impacts of Eurasian water milfoil on the lake.[2]
5. The Blue Spring Lake Association should complete development of a management plan and continue monitoring aquatic vegetation to encourage and protect native plants.[2]

[1] These recommendations are a basis for work planning or other decisions, which must be approved by the appropriate DNR division administrator (the recommendations are a starting point for the work planning process.

[2] These recommendations are advisory to the public, local governments, lake management organizations, and other groups or agencies. These recommendations are not binding. No statutory or codified requirements exist.

ACKNOWLEDGMENTS

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Photo credits: Keir Morse (big-toothed aspen); Chuck Morlock (Kettle Moraine); WDNR (stream/lake photos); Virginia Kline's Vegetation of Wisconsin Collection (milfoil); Alberta Fish and Wildlife (sturgeon); and [WI State Herbarium: Ken Sytsma (shagbark hickory bark, cinquefoil, willow, prairie rosinwood), James R. Sime (shagbark hickory bud), Emmet Judziewicz (goldenrods), and Hugh Iltis (New England aster)]; WI Water Resources (pond life); Robert Savannah/US Fish and Wildlife Service (bottle gentian).

Canadian goldenrod

REFERENCES (as in the following Streams Table)

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75 WI DNR. 1996. Surface Water Files. Southeast Region. Wisconsin Department of Natural Resources.

79 WI DNR. 1980. Wisconsin Trout Streams. Wisconsin Department of Natural Resources.

87 WI RPC. 1978. Water Quality of Lakes and Streams in Southeastern Wisconsin: 1964-1975, Technical Report 17, Southeastern Wisconsin Regional Planning Commission.

New England aster

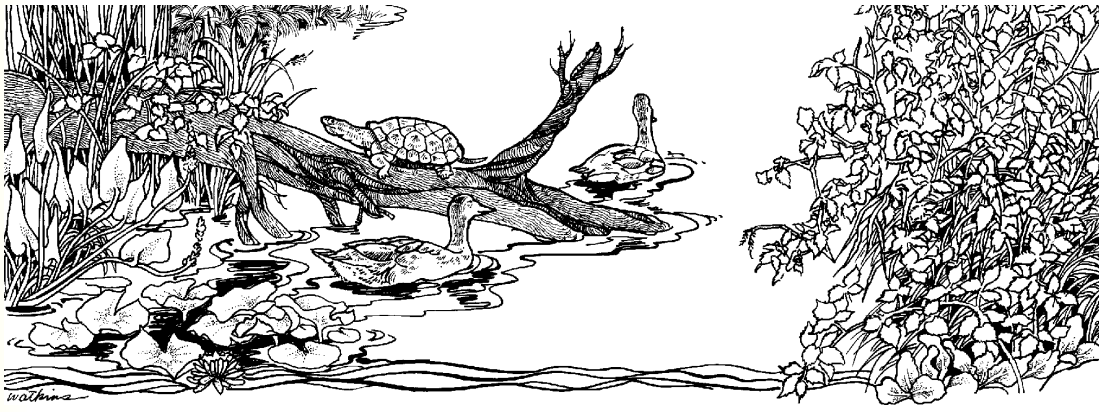

Table 4: Streams in the Scuppernong River Watershed (LR15)

Stream Name	WBIC	County	Length (Miles)	Existing Use (Miles)	Potential Use (Miles)	Supporting Potential Use (Miles)	Current Codified Use	303(d) Status	Use Impairment		Data Assess-ment	Data Level	Trend	References
									Source	Impact				
Funk Creek	0821200	Walworth	1.5	COLD I/1.5	COLD I/1.5	Full /1.5	COLD 1	N	None	None	M	B3 H2	I	47, 75
Mud Creek	0819900	Jefferson	8	LFF/8	Same	Part	WWSF*	N	HM, NPS, CL	FLOW, HAB, TURB, SED, NUT, DO, TEMP	E	H1	U	27, 47, 60, 87
Paradise Springs Creek	0821400	Waukesha	2	COLD II/2	Same	Part - Thr	WWSF*	N	HM	FLOW, TEMP, MIG	M	B3 H2 C1	I	50, 75
Scuppernong River	0817600	Jefferson	0 - 13	WWSF/13	Same	Part	WWSF*	N	URB, HM, NPS, PSM, CL	HAB, FLOW, TEMP, DO, NUT,	E	B3 H1	S	27, 50, 47, 60, 87
		Waukesha	13 - 14.5	COLD III/1.5	COLD II/7	Part /1.5	WWSF*	N	HM, NPS, CL, URB, CE, SB, PSB	HAB, FLOW, TEMP, DO, NUT, FKILL, MAC, TURB	E	B4 H2 C1	I	
			14.5 - 19.5	COLD III/5	COLD II/7	Part - Thr/5.5	COLD III/5	N			E			
			19.5 - 20	COLD III/.5	COLD II/7	Part - Thr/5.5	COLD II/.5	N			M			
Spring Creek	0819100	Jefferson Walworth	5	WWFF/5	WWFF/5	Not/5	WWSF*	Y	HM, NPS, PSI	HAB, FLOW, TURB, TEMP, NUTS, DO	M	B4 H2 C4	S	17, 27, 32, 48, 47, 60, 87
Steel Brook	0817800	Walworth Jefferson	0 - 1.7	WWFF/1.7	Same	Part/1.7	WWSF*/1.7	N	HM, NPS, CL, PSB, CE, DEV	SED, TURB, TEMP DO, HAB, NUT	E	B3 H1	S	17, 48, 47, 60, 75, 78, 79, 87
			1.7 - 6	COLD III/4.3	COLD II/4.3	Part - Thr/4.3	COLD II/1 COLD III/3.3	Y (mile 1.7 - 2.7)	NPS, CL	SED, TURB, TEMP DO, HAB, NUT	M	B4 H2	S	
Unnamed Streams			41											

Table 5: Lakes in the Scuppernong River Watershed (LR15)

Lake Name	County	Town, Range, Section	WBIC	Surface Area (Acres)	Max Depth (ft)	Mean Depth (ft)	Lake Type	Winter kill	Acc-ess	SH	Hg	Mac	LMO	TSI	TSI Class	Lake Plan Prot	P Sens	Impairment		Comments
																		Source	Impact	
Blue Spring Lake	Jefferson	T05NR16E S28	0819800	151	12	7	SP	N	UNS	C	GA	EM	DIST	50***	--	PLAN	II B	--	--	--
Lower Spring Lake	Jefferson	T05NR16E S22	0820800	104	11	4	DG	N	UNS	--	GA	EM	Y	31*	--	PLAN	II B	--	--	--
Ottawa Lake	Waukesha	T06NR17E S34	0822200	28	16	7	SP	N	BR	--	GA	--	X	--	ME	--	I A	--	--	--
Upper Spring Lake	Jefferson	T05NR16E S24	0821000	17	11	4	DG	--	UNS	--	GA	--	--	--	--	--	II A	--	--	--